DIAGNOSTIC TESTING PROTOCOLS

Guidelines for the Ordering of CT Scans, MRI Scans, EMG, Bone Scans, Myelograms & Angiograms

I. CT Scans

A. A CT scan is appropriate for an acute head injury when there is need to rule out an associated acute cerebral condition.

B. A CT scan is appropriate for low back injuries with appropriate neurologic deficits which have not responded to conservative treatment after a period of 4 to 6 weeks.

C. In the event of an eye injury, orbital CT scans may be ordered by an ophthalmologist in the presence of foreign body or orbital injury.

D. Shoulder injuries may require a CT scan, but this should be ordered by an Orthopedic Surgeon.

E. A CT scan may be ordered by an Orthopedic or Neurosurgeon in a case where a patient has undergone a 2nd or 3rd surgical procedure and in which a lumbar fusion is being considered.

F. A repeat CT scan may be ordered if there has been a marked progression of signs and symptoms but should not be ordered just for routine follow-up purposes.

G. CT scans may not be ordered for routine follow-up purposes. In addition, any follow-up CT scan may only be done with the permission of the employer/insurer.

II. MRI Scans With or Without Contrast

Indications

A. Cervical injuries in which a cervical disc is suspected, generally performed without contrast. (to be ordered generally by Orthopedic Surgeon, Neurologist, Neurosurgeon, Physiatrist, or Rheumatologist).

B. Acute knee injuries with suspected (1) meniscal injuries or (2) collateral ligament injuries (to be ordered only by an Orthopedic Surgeon, Physiatrist or Rheumatologist).

C. In lumbar disc injuries, a CT scan may be a reasonable alternative. Generally both studies should not be performed.
(to be ordered generally by Orthopedic Surgeon, Neurologist, Neurosurgeon, Physiatrist, or Rheumatologist).

D. In metatarsal fractures, an MRI is rarely indicated (can be ordered only by an Orthopedic Surgeon/Hand Surgeon, Physiatrist or Rheumatologist).

E. Thoracic spine injuries with any indication of damage within the canal (to be ordered generally by Orthopedic Surgeon, Neurologist, Neurosurgeon, Physiatrist, or Rheumatologist).

A repeat MRI study is indicated only if:

1) There are clear clinical or radiographic signs of significant progression.
2) A repeat study may be useful after surgery if a patient's condition fails to improve. In this situation, contrast material should be used to differentiate between further disc material and scar tissue.

F. Waters view is frequently done to determine if there is a suspicion of a metallic foreign body of the orbit. In

the infrequent occasion in which there is a high level of suspicion of metallic foreign body in the orbit, a CT scan of the orbit can be done.

G. MRI can be utilized for shoulder injuries (to be ordered only by an Orthopedic Surgeon, Physiatrist or Rheumatologist).

H. An MRI of a peripheral nerve disorder may only be ordered by a specialist (Orthopedic Surgeon, Neurologist, Neurosurgeon, Physiatrist or Rheumatologist) and only with the express consent of the insurer.

MRI scans may not be ordered for routine follow-up purposes. In addition, any follow-up MRI Study may only be done with the permission of the employer/insurer.

III. Bone Scans

A Bone Scan may be ordered for the following reasons:

A. Suspected tumor involvement of the bony part injured.

B. Suspected infection of the bony part injured.

C. Occasionally, where x-rays have failed to show a fracture.

D. In some cases of acute knee injuries. (should be ordered by an Orthopedic Surgeon)

IV. Myelograms

A Myelogram may be ordered for the following reasons:

A. When there are true signs of cervical disc and one has been demonstrated by MRI Scan and the patient is a surgical candidate.

B. In a low back injury where a disc has previously been demonstrated by CT Scan or MRI Scan and who has not

responded to conservative treatment and the patient is a surgical candidate.

C. Thoracic injury would follow the same as above.

D. Any spinal fracture or subluxation in which there is suspected cord compression.

V. Angiograms

A. In traumatic cervical injuries in which there is a suspicion of damage to the vertebral or carotid arteries.

B. In thoracic outlet syndrome, if vascular compression is suspected.

VI. Electromyogram and Nerve Conduction Studies

Neurophysiological studies (EMG and CV studies) are frequently utilized diagnostic techniques for the identification and assessment of disorders affecting the nerve roots (radiculopathy), peripheral nerves, neuromuscular junction and for the diagnoses of diseases of the muscles. These techniques are generally not useful for the diagnosis of disorders of the central nervous system.

The aforementioned electrophysiological techniques can be utilized for the diagnosis or evaluation of several conditions that are associated with an injury at work. These include (I) radiculopathy in association with disc disease, with spondylitic disease, or with other nerve root conditions, (II) peripheral nerve injury.

A. Radiculopathy - EMG studies are employed to detect the presence of nerve root injury. This study is most useful after a period of four weeks and is generally not indicated prior to that time.

1. If the initial study is negative for nerve root irritation and/or damage, a repeat study may be indicated after a six month time interval. However, a repeat study can be performed prior to six months if surgery is under consideration or if requested by an attending physician.

Follow-up EMG studies may be required (on not less than a yearly basis), for the purpose of re-evaluation of an active problem requiring ongoing treatment (prior to MMI).

2. If the study is abnormal, a repeat study may be indicated (after six months) if:

a. There is a significant change in the patient's clinical status.

b. If surgical treatment has been performed and the desired clinical result has not been achieved.

c. If repeat surgical treatment is being contemplated or if the study is requested by the attending physician (radiculopathy).

3. Conduction velocity studies can be useful in evaluating for the presence of radiculopathy as well.

a. In testing for radiculopathy, study of a motor nerve, a sensory nerve and study of a "late response" (usually F wave in the upper extremity and the H response in the lower extremity) may be of significant value in the diagnosis of a radiculopathic disorder. H response may be performed in the opposite extremity as well.

b. In addition, studies may need to be performed to rule out an associated peripheral nerve lesion, and the appropriate format for study is described below (see "II. Peripheral Nerve Injury").

B. Peripheral Nerve Injury

1. Studies can include EMG and CV studies to evaluate for the presence of a peripheral nerve injury.

a. Acute injury - EMG and nerve conduction studies are the most useful after four weeks (approximately) and are generally not indicated prior to that time. However, EMG and nerve conduction studies can be performed prior to that time if

(1) surgical treatment is under consideration or

(2) if requested by an attending physician.

b. Chronic dysfunction - In general, a single study (EMG and CV) is sufficient to evaluate for a chronic nerve disorder (carpal tunnel, ulnar nerve disorder or other nerve entrapment condition). A repeat study may be performed after three or four months if specific treatment (for example, surgical release procedure) is contemplated or if requested by the attending physician. Follow-up studies may be performed after this time but not more frequently than yearly for purpose of re-evaluation of an active problem requiring ongoing treatment (prior to MMI).

2. Concerning the issue of nerve conduction studies and the appropriate nerve(s).

a. Conduction velocity studies are useful for the study of one or more nerves that are clinically suspect in the affected extremity.

b. Testing of an uninvolved nerve in the same limb such as the ulnar nerve in a patient with, for example, a median nerve disorder (carpal tunnel) is useful. Studies of the contralateral and presumably normal nerve may also be of diagnostic importance.

c. On occasion, the testing of a motor nerve, a sensory nerve, and a "late response" study may be performed in a non-affected extremity to evaluate for the presence of a coexistent systemic peripheral nerve disorder (e.g. Diabetic Peripheral Neuropathy).

VII. Evoked potential studies are not useful for diagnosis and management of peripheral nerve disorders.

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